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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/329,557	06/10/1999	STEVEN J. HEINRICH	TDH-025	8245
29106 7590 02/07/2007 GROOVER & HOLMES BOX 802889 DALLAS, TX 75380-2889			EXAMINER NGUYEN, PHU K	
			ART UNIT	PAPER NUMBER
			2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/07/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

09/329,557

Applicant(s)

HEINRICH ET AL.

Examiner

Phu K. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-83 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31-72 is/are allowed.
- 6) ☒ Claim(s) 1,5,9,13,17,21,25,28 and 73-80 is/are rejected.
- 7) ☒ Claim(s) 2-4,6-8,10-12,14-16,18-20,22-24,26,27,29 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

*Phu K. Nguyen*

PHU K. NGUYEN  
PRIMARY EXAMINER  
GROUP 2300

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5/8/03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

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The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 17-24, 51-60, and 65-66 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Disclosure does not specify what is the "computer program product" or the computer usable medium; it is unclear as whether a computer readable medium is a computer memory or the signals form the communication network.

Claims 17-24, and 51-60, and 65-66 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a computer readable medium or a computer product asserted utility or a well established utility.

The claimed computer readable medium can be interpreted as the wave carriers of the transmitted signals per se which is not a practical application with concrete, tangible, and useful properties, and is a nonstatutory natural phenomena O'Reilly, 56 U.S. (15 How.) at 112-14. The claimed program codes are just functional descriptions of the computer instructions which are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 9, 13, 17, 21, 25, 28, 73-80 are rejected under 35 U.S.C. 102(b) as being anticipated by JOUPPI et al. (EP 0 910 047 A2).

As per claim 1, Jouppi teaches the claimed “method of displaying a first image on a display device, the display device having a plurality of pixels, each pixel having a unique location on the display device”, the method comprising: “assigning one of a plurality of sample patterns to each pixel on the display device, each pixel being assigned the one of a plurality of sample patterns based upon its unique location on the display device, each sample pattern having at least one sample location” (Jouppi, pixel 300, figure 3); “determining if the first image intersects any of the sample locations on each pixel” (Jouppi, column 8, lines 37-42); and “illuminating pixels determined to have at least one sample location that intersects the first image” (Jouppi, column 9, lines 43-48).

Claim 5 adds into claim 1 “wherein attribute data comprises color data” which Jouppi teaches in column 12, line 53 to column 13, line 7.

As per claim 25, Jouppi teaches the claimed "method of illuminating a pixel on a display device", the method comprising: "detecting one or more images that intersect the pixel" (Jouppi, pixel 300, figure 3); "providing a data slot for each image that intersects the pixel, each data slot including attribute data and depth data for its image on the pixel" (Jouppi, column 8, lines 37-42; paragraph [0082]); "calculating a weighted pixel attribute average for the attribute data of all slots, the weighted average being calculated each time a new slot is generated" (Jouppi, column 13, lines 26-43) and "utilizing the weighted average to illuminate the pixel each time the weighted average is calculated" (Jouppi, column 9, lines 43-48).

Claim 28 adds into claim 25 "wherein each data slot is stored in memory as a list" (Jouppi, figures 6A and 6C).

As per claim 73, Jouppi teaches the claimed "graphics processor, for use with a computer system, for generating antialiased graphical images, the computer system having a central processing unit, a display device, and a system bus for coupling the graphics processor with the central processing unit and the display device, the display device including a plurality of pixels", the graphics processor comprising: "a system bus interface that receives polygon data from the central processing unit, the polygon data including vertex data that defines a polygon" (Jouppi, system 100, figure 1); "a subpixel sample location generator for generating a plurality of sets of subpixel sample locations, each set of subpixel sample locations being associated with one of the pixels and

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having values that are dependent upon the location of the associated pixel” (Jouppi, pixel 300, figure 3); “a rasterizer that receives the polygon data and determines, by accessing the memory, which of the subpixel sample locations on each pixel are covered by the polygon” (Jouppi, column 8, lines 37-42; paragraph [0082]; column 13, lines 26-43, column 9, lines 43-48).

Claim 74 adds into claim 73 “wherein the subpixel sample location generator defines a plurality of subpixel regions on each pixel, further wherein each subpixel region in a given pixel includes one of the subpixel sample locations in one set of subpixel sample locations” (Jouppi, paragraphs [0065]-[0066]).

Claim 75 adds into claim 73 “wherein the rasterizer includes a pixel value determiner that determines the color value of each pixel on the display device” (Jouppi, paragraph [0073]).

Claim 76 adds into claim 73 “wherein the pixels having sample locations that are covered by the polygon are included in a set of pixels, the rasterizer determining pixel attributes of each pixel in the set of pixels based upon the number of covered sample locations within each pixel” (Jouppi, paragraphs [0065]-[0066]).

Claim 77 adds into claim 76 “the attributes include color, transparency and intensity information” (Jouppi, paragraph [0078]).

Claim 78 adds into claim 77 "the attributes include depth coordinate information" (Jouppi, paragraph [0072]).

Claim 79 adds into claim 73 "wherein the subpixel sample location generator includes a look-up table" (Jouppi, paragraph [0022]).

Claim 80 adds into claim 73 "wherein the sets of subpixel sample locations are identical for selected pixels on the display device" (Jouppi, the pixels in the display having the same pattern with pixel 300).

As per claim 9, Jouppi teaches the claimed "apparatus for displaying a first image on a display device, the display device having a plurality of pixels, each pixel having a unique location on the display device", the apparatus comprising: "a pattern assignor that assigns one of a plurality of sample patterns to each pixel on the display device, each pixel being assigned the one of a plurality of sample patterns based upon its unique location on the display device, each sample pattern having at least one sample location" (Jouppi, pixel 300, figure 3); "an image detector operatively coupled to the pattern assignor, the image detector determining if the first image intersects any of the sample locations on each pixel" (Jouppi, column 8, lines 37-42); and "a pixel illuminator operatively coupled with the image detector, the pixel illuminator illuminating pixels

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determined to have at least one sample location that intersects the first image" (Jouppi, column 9, lines 43-48).

Claim 13 adds into claim 9 "wherein attribute data comprises color data" which Jouppi teaches in column 12, line 53 to column 13, line 7.

As per claim 17, Jouppi teaches the claimed "computer program product for use with a computer system for displaying a first image on a display device, the display device having a plurality of pixels, each pixel having a unique location on the display device, the computer program product comprising a computer usable medium having computer readable program code thereon", the computer readable program code including: "program code for assigning one of a plurality of sample patterns to each pixel on the display device, each pixel being assigned the one of a plurality of sample patterns based upon its unique location on the display device, each sample pattern having at least one sample location" (Jouppi, pixel 300, figure 3); "program code for determining if the first image intersects any of the sample locations on each pixel" (Jouppi, column 8, lines 37-42); and "program code for illuminating pixels determined to have at least one sample location that intersects the first image" (Jouppi, column 9, lines 43-48).

Claim 21 adds into claim 17 "wherein attribute data comprises color data" which Jouppi teaches in column 12, line 53 to column 13, line 7.

Claims 2-4, 6-8, 10-12, 14-16, 18-20, 22-24, 26-27, 29-30, 81-83 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in



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independent form including all of the limitations of the base claim and any intervening claims.


Claims 31-72 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu K. Nguyen whose telephone number is (571) 272 7645. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (571) 272 7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phu K. Nguyen  
January 30, 2007

  
PHU K. NGUYEN  
PRIMARY EXAMINER  
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